REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-22 are pending in the present application; Claims 5-10 and 13-22 were withdrawn from consideration; Claims 2 and 4 having been amended[1]; and Claim 12 having been canceled by way of the present amendment.

In the outstanding Office Action, Claims 2 and 4 were rejected under 35 U.S.C. § 102(b) as being anticipated by Yamazaki et al (US6,323,142). Claim 2 was rejected under 35 U.S.C. § 102(e) as being anticipated by Choi et al (US2004/0209487). Claim 4 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Choi et al and further in view of Lagendijk (US5,028,566). Claims 1, 3, and 11 were indicated as being allowable. Claim 12 was indicated as being allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding the art rejections, Claim 2 has been clarified to define a film-forming method comprising: supplying into a plasma processing chamber at least three kinds of gases including a silicon compound gas comprising a silicon atom-containing compound, an oxidizing gas, and a hydrogen gas, the percentage (diluting rate) of the partial pressure of the hydrogen gas (Ph) with respect to the total pressure of the mixture gas being 100%, satisfying: $0\% < Ph < 3\%$; and generating a plasma within the plasma processing chamber so as to form a film of silicon oxide on a substrate to be formed.

Of the applied art references, Yamazaki et al are relevant for their disclosure of various hydrogen ratios and their teachings for carbon removal. Yamazaki et al disclose in column 18, lines 10 - 30, that:

[1] Support for features in Claim 2 is found in the description provided in the specification, page 15, first full paragraph.. The subject matter of Claim 4 was contained in original Claim 4.

> The undercoat film 402 was formed by using a parallel plate plasma CVD apparatus and gasses of ethyl orthosilicate (also called TEOS), oxygen and hydrogen. Other types of organic silane such as OMCTS (octamethylcyclotetrasiloxane) and HMDS (hexamethyldisioxane) may be used effectively instead of ethyl orthosilicate. The substrate temperature was increased to 200-500° C., typically 400° C., and the film forming pressure was set at 0.1-2 Torr, typically 1 Torr. The frequency of a plasma, power supply was made a high frequency of 5-50 MHz, typically 20 MHz, and its power was set at 0.1-2 W/cm^2, typically 0.3 W/cm^2. The supply ratio of ethyl orthosilicate to oxygen was set at 1:5-20, typically 1:5. The amount of hydrogen was set in a range of (ethyl orthosilicate):hydrogen = 1:0.1-1, typically at 1:0.5. The undercoat film 402 was formed at a thickness of 500-3,000 Å, typically 2,000 Å.

Yamazaki et al further state that, in forming an oxide film such as the undercoat film 402, it is very effective to eliminate undesirable carbon from the film by means of hydrogen radicals.[2] Yamazaki et al specifically disclose at column 22, lines 12-13, the use of equal parts of hydrogen and oxygen to eliminate undesirable carbon.

M.P.E.P. § 2131.03 indicates that, if the claims are directed to a narrow range and the reference indicates a broad range, it may be reasonable to conclude that the narrow range is not disclosed with sufficient specificity. In this case, Yamazaki et al's disclosure of a broad range and subsequent disclosure of a narrow range (outside the presently claimed range) means that Yamazaki et al do not disclose the claimed range with sufficient specificity to anticipate the claimed range of : $0\% < Ph < 3\%$.

Moreover, if the claimed range were considered obvious in view of Yamazaki et al, M.P.E.P. § 2144.05 indicates that evidence of teaching away can rebut a *prima facie* case of obviousness. Yamazaki et al, in disclosing a high concentration of hydrogen to reduce carbon concentration (a requirement for a high quality SiO_2 film), teaches away from Claim 2 which defines a process in which the partial pressure of hydrogen gas (Ph) satisfies the relationship: $0\% < Ph < 3\%$).

[2] Yamazaki et al, col. 18, lines 32-36.

The Court in *KSR International Co. v. Teleflex Inc. et al. 2007 U.S. LEXIS 4745* reinforced that teaching away support non-obviousness. The Court stated that:

> In *United States v. Adams*, 383 U. S. 39, 40 (1966), a companion case to *Graham*, the Court considered the obviousness of a wet battery that varied from prior designs in two ways: It contained water, rather than the acids conventionally employed in storage batteries; and its electrodes were magnesium and cuprous chloride, rather than zinc and silver chloride. The Court recognized that when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result. 383 U. S., at 50-51. It nevertheless rejected the Government's claim that Adams's battery was obvious. The Court relied upon the corollary principle that when the prior art ***teaches away*** from combining certain known elements, discovery of a successful means of combining them is more likely to be nonobvious. *Id.*, at 51-52. When Adams designed his battery, the prior art warned that risks were involved in using the types of electrodes he employed. The fact that the elements worked together in an unexpected and fruitful manner supported the conclusion that Adams's design was ***not obvious*** to those skilled in the art. [Emphasis added.]

Hence, for all these reasons,Claim 2 and the claims dependent therefreom patently define over Choi et al and Lagendijk and Yamazaki et al.

Consequently, in view of the present amendment and in light of the above discussions, the outstanding grounds for rejection are believed to have been overcome. The application as amended herewith is believed to be in condition for formal allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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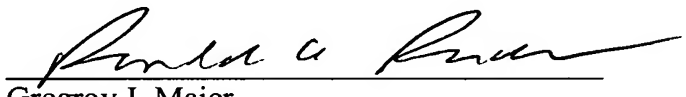

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